

REMARKS

Claims 1-8 are pending in the application. The Examiner has rejected claims 1-8 under 35 U.S.C. §103(a) as being unpatentable over Okada (U.S. Patent No. 6152880, hereafter "Okada") in view of Chen et al. (U.S. Patent No. 6,602,199, hereafter "Chen") and Ogura et al. (U.S. Patent No. 5,649,536, hereafter "Ogura") .

Independent claim 1 cites:

1. An electronic sphygmomanometer capable for timing measurement, comprising:
a bulk body;
a key module installed on a surface of the bulk body, operative to input parameters including measuring time, measuring interval, measuring times, and abnormal blood pressure threshold value;
a display, mounted on the surface of the bulk body, operative to display information;
a controller, embedded in the bulk body;
an electronic manometer embedded in the bulk body and electrically connected to the controller, the electronic manometer being controlled by the controller to activate blood pressure measurement, the manometer being operative to transmit a measured blood pressure value to the controller;
a memory embedded in the bulk body and electrically connected to the controller, the memory being operative to store the parameters input by the key module; and
a gas filling ring connected to the manometer via a tube, the gas filling ring being operative to apply a pressure on an arm or a wrist of a user to perform blood press.

(Emphases added).

Okada discloses a blood pressure measuring device having a wearable detector unit, a display unit, a diagnosing circuit and the display unit including warning display means.

Comparing to the current invention, the Examiner recognizes that Okada does not explicitly teach the key module operative to input parameters including measuring times, measuring interval, abnormal blood pressure threshold values and a memory connected to the controller operative to store the parameters input by the key module. However, the Examiner states that the combination of Okada, Chen and Ogura will teach all elements of the current invention.

Applicant respectfully disagrees.

Chen discloses an oscillometric technique based blood pressure measuring device which

can minimize the effects of white coat hypertension and the unreliability of initial measurements. Chen col. 5, ll. 1-4. Chen uses an input interface to accept a user commands to set operating parameters for his apparatus, these input commands include the number of measurement during a measuring cycle, and the interval between successive blood pressure measurements. Chen col. 7, ll. 13-25. Although Chen's device will compare the SBP, DBP and heart rate against a set of pre-stored values to see if the measured results are within the normal threshold limits. Col. 7, ll. 26-44, nevertheless, it is different from the current invention which an individual person's threshold BP or pulse values can be input into the device and are further used to compare his/her measured BP and pulse results against his/her personal threshold BP and pulse values.

At the same time, Ogura discloses a blood measuring apparatus which judges whether the patient has a heart disease by measuring his/her BP values in correlation with the time changes of the waveforms of pulse waves of the patient. Ogura col. 4, ll. 51-56. Ogura uses the correlation between the pulse waveforms and BP measurements to eliminate the measuring errors caused by external factors, such as improper postures of the patient. Col. 2, ll. 36 – 43. Ogura's device determines a rate of change of the pulse amplitudes with respect to the cuff pressure P_c , based on the prescribed cuff pressure values P_{c-1} and P_{c-2} and their corresponding amplitude A_{m2} and A_{m1} . Ogura uses previous measurements of BP and pulse amplitude to verify the successive BP and pulse measurement.

“When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” In re Rouffet, 149 F.3d 1350, 1355 (Fed. Cir. 1998). Stated another way, the prior art as a whole must “suggest the desirability” of the combination. In re Beattie, 974 F.2d 1309, 1311 (Fed. Cir. 1992) (internal quotation omitted); Winner Int'l Royalty Corp. v. Wang, 202 F.3d 1340 (Fed. Cir. 2000) (“Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.” (emphasis added)). The source of

the teaching, suggestion, or motivation may be "the nature of the problem," "the teachings of the pertinent references," or "the ordinary knowledge of those skilled in the art." In re Rouffet, 149 F.3d at 1355.

First, A skilled person of blood pressure measuring device will not combine Chen with Ogura, the operative principle and procedure of Chen and Ogura are defined in their respective claim 1. Claim 1 of Ogura reads:

1. An apparatus for measuring a blood pressure of a living subject, comprising:
an inflatable cuff adapted to be wound around a body portion of the subject, said cuff
being inflated to provide a cuff pressure to press said body portion;
a pressure changing device which changes said cuff pressure;
a blood pressure measuring device which (a) obtains a heartbeat-synchronous signal
wave generated from arteries of said body portion in synchronism with heartbeat of the subject
while said cuff pressure is changed by said pressure changing device, (b) determines
respective amplitudes of a plurality of successive pulses of said heartbeat-
synchronous signal wave each of which corresponds to one cycle of heartbeat of the
subject, and provides, as a first series of determined pulse amplitudes, the
determined pulse amplitudes arranged in an order of generation of the
corresponding pulses, (c) smoothes said first series of determined pulse amplitudes
and thereby provides a second series of smoothed pulse amplitudes, and (d)
determines a blood pressure value of the subject based on a change in said second series
of smoothed pulse amplitudes;
an output device which outputs a two-dimensional representation comprising a number of
picture elements; and
a control device which controls said output device to output said two-dimensional
representation representative of said first series of determined pulse amplitudes and said
second series of smoothed pulse amplitudes such that one of said first and second
series of pulse amplitudes are superimposed on the other series of pulse amplitudes.

(Emphases added).

While claim 1 of Chen reads:

1. A method for measuring a blood pressure of a subject, the method comprising:
under automatic control, performing a sequence of four or more measurements of the
subject's blood pressure at spaced apart times to obtain four or more measured values for
the blood pressure; and,
computing an estimate of the blood pressure from two or more of the measured values
without using an initial group of two or more of the measured values in computing
the estimate.

(Emphases added).

Chen teaches discarding "two or more the measured values when computes an estimate of the blood pressure", where Ogura will compute the change occurred in the previous measurements to further judge the normality of the successive measurement. If the first two or more blood pressure measurements are discarded as Chen teaches, then two more measurements are required before any reliable measuring result can be obtained according to Ogura's design. Chen and Ogura have such differences in their design and operating principle so that it is not feasible nor desirable to combine them together. Besides, Ogura requires extra hardware and software to measure respective amplitudes of a plurality of successive pulses of said heartbeat-synchronous signal waves to work with the blood pressure measurements. While Chen, Okada and the current invention do not need such pulse amplitude measurements to adjust blood pressure measurement.

Second, Chen's input interface provides a user to select the number of measurements in a measurement cycle and the interval between measurements. Ogura discloses having an input device which a user can input the reference values, such as the normal values of SBP, DBP, pulse and the acceptable change rates of the device. However, Chen or Ogura or the combine of both of them doesn't disclose an input device that can setup measuring time as the current invention does. As stated in MPEP §2143.01:

The mere fact that references can be combined or modified do not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Therefore, Applicant respectfully submits that it would not be obvious to a skilled person in the blood pressure measurement device field to combine Okada with Chen and Ogura. If the Examiner believes that a further telephonic interview will facilitate allowance of the claims, he is respectfully requested to contact the undersigned at (610) 446-5886. For the reasons stated above, Applicants respectfully assert that the pending claims are in condition for allowance. Reconsideration and allowance of the pending claims are respectfully requested.

Respectfully submitted,

Thi Ngoc Phuong Nguyen

By 
Kao H. Lu, Esquire
Registration No. 43,761
(610) 446-5886

686 Lawson Ave
Havertown, Pa 19083